We claim:

Claim 1: A method for in-line monitoring of a fluid composition, the method comprising:

placing a tuning fork resonator in contact with the fluid composition in a conduit;

oscillating the resonator while the fluid composition is flowing the conduit;

monitoring the resonator to obtain a resonator response; and

determining at least two properties of the fluid composition based on the resonator response.

Claim 2: The method of claim 1, wherein the at least two properties are selected from the group consisting of viscosity, density, viscosity density product, molecular weight, specific weight, elasticity, dielectric constant, conductivity.

Claim 3: The method of claim 2, wherein the at least two properties are simultaneously determined based on the resonator response.

Claim 4: The method of claim 2, wherein the at least two properties are separately determined based on the resonator response.

Claim 5: The method of claim 2, wherein the at least two properties are viscosity and density.

Claim 6: The method of claim 2, wherein the at least two properties are viscosity and dielectric constant.

Claim 7: The method of claim 2, wherein the separately determining step included separately determining at least three properties of the fluid composition.

Claim 8: The method of claim 7, wherein the at least three properties are viscosity, dielectric constant and conductivity.

Claim 9: The method of claim 2, further comprising:

calibrating the resonator against a standard fluid or a number of standard fluids having known properties to obtain calibration data; and

determining the at least two properties based on the calibration data and the resonator response.

Claim 10: The method of claim 9, wherein the conduit is an oil pipeline.

Claim 11: A method for in-line monitoring of a fluid composition, the method comprising:

calibrating a tuning fork resonator against a standard fluid or a number of standard fluids having known properties to obtain calibration data;

placing the resonator in contact with the fluid composition in a conduit;

oscillating the resonator while the fluid composition is flowing the conduit;

monitoring the resonator to obtain a resonator response; and

simultaneously determining at least two properties based on the calibration data and the resonator response.

Claim 12: The method of claim 11, wherein the at least two properties are viscosity and density.

Claim 13: The method of claim 11, wherein the at least two properties are viscosity and dielectric constant.